Miasma – The Source of Injuries?

When we look at the history of germ theory we see that before the microscope there were many speculations about the causes of disease. One was thought to be a mysterious unrecognizable force called *Miasma,* defined as a noxious atmosphere, odor or influence. A fantastic read is Steven Johnson’s excellent book; *The Ghost Map* that sheds incredible light on the Miasma theory.

The concept of communicable diseases was unknown prior to the American Civil War. For some diseases it was widely believed that the illness was hereditary, linked to poor habits, or caught from being near a sick person.

I have heard similar generalizations about the causes of accidents. Some people wrongfully believe that there are “*accident prone*” people. In the pre-worker’s compensation times there was: “*The fellow worker defense*”. If you were unfortunate enough to get injured because of someone else’s actions then the employer was not responsible. To me that is like being in the presence of a “*sick*” person.

The only part of the analogy that works for me is the bad habits statement. I believe that some accidents can be initiated by specific at-risk behaviors. If we habitually perform at- risk behaviors we greatly increase the probability that an undesirable outcome will occur.

Accident prevention is the most basic of all safety management paradigms. In health research; they used a microscope to divulge the hidden germs. We too have to probe to discover the root causes, of injuries. There are various accident causation models:

* The Human Factors theory attributes accidents to a chain of events ultimately caused by human error. It consists of 3 broad factors that lead to human error: overload, inappropriate response, and inappropriate activities.
* The Epidemiological theory holds that the models used for studying & determining the relationships between environmental factors & disease can be used to study causal relationships between environmental factors and accidents.
* Management failures are another leading cause of accidents on the job. If management is serious about workplace safety & health, it must establish expectations, provide training, evaluate employee performance with safety in mind, and reinforce safe and healthy behavior.

When I first heard about the “Miasma” germ theory, I was unaware that there was a corresponding accident causation model based on epidemiology. John E. Gordon, MD in the *American Journal of Public Health,* (April, **1949**) recognized that “injuries …., are equally subject to this approach”, meaning that our understanding of accidents would benefit by recognizing that accidents are caused by:

* A combination of forces from at least 3 sources, which are the host – & *person* is the host of principal interest – the agent itself, & the environment in which host & agent find themselves.

There is no a noxious atmosphere that causes accidents but, we can profit from looking at accident causation with the help of epidemiological techniques. What do you think?